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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/909,488	07/20/2001	Harapanahalli S. Muralidhara	11936.15US01	2586

23552 7590 08/15/2005  
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P.O. BOX 2903  
MINNEAPOLIS, MN 55402-0903

EXAMINER

FORTUNA, ANA M

ART UNIT	PAPER NUMBER
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1723

DATE MAILED: 08/15/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/909,488

Applicant(s)

MURALIDHARA ET AL.

Examiner

Ana M. Fortuna

Art Unit

1723

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 30 March 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-14, 16-29 and 31-39 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-14, 16-29 and 31-39 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 3/1/05, 3/24/05
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### *Claim Rejections - 35 USC § 103*

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-14, 16-29, 31-35, 37-39 are rejected under 35 U.S.C. 103(a) as being unpatentable over Koch Catalogue (Nanofiltration-Filtration Overview a KMS Leadership Category)(hereinafter Koch) or Nitya et al (Metropolitan Water District of South California, 1999-2000 HMC Clinic Presentation)(hereinafter Nitya) in view of Applicant's admissions. Koch provides information about their SR® membranes and its suitability and design for treating municipal and waste water; the use of nanofiltration membranes for treating water to produce potable water is disclosed in Koch (page 1, and pages 2-3, Table). Applicant admits that the membrane used in his apparatus and process is a SR®1 nanofiltration membrane from Koch Membrane System (page 11, second paragraph). It would have been obvious to one skilled in the art at the time the invention was made to use the nanofiltration(s) membrane of Koch, e.g. SR® 1 in a system and processes suggested by the manufacturer, e.g. in water softening or treatment of municipal water to produce potable water. The membrane rejection properties, operating pressure and recovery appear to be inherent of the membrane. The

Art Unit: 1723

membrane molecular weight cut-off and operating pressure ranges are also disclosed in the Koch catalogue (Page 1).

The publication by Nytia discloses the use of Sr® 1 (loose nanofiltration fro Koch Membrane systems) in treatment of potable water sources, e.g. ground water (pages 1-7). The membrane rejection, low pressure operation, and permeate recovery is considered inherent of the membrane, and suggested by its manufacturer. One skilled in the art at the time the invention was made it would have been motivated to use loose nanofiltration membranes in softening sources of potable water, e.g. to remove divalent ions and organic and produce water with better taste and suitable salt content. Higher recoveries can be expected from the loose high flow and low pressure membrane. The charge seems also to be inherent of the membrane. Mounting the membrane in conventional membrane housings having inlet and outlets is inherently required for membrane testing.

Regarding to the system or process high recovery, that can either be inherent of the membrane at the suggested pressure operation, or can be obtained by assembling multiple units in parallel, increasing pressure, or controlling the system operation in a known manner, e.g. increasing pressure, controlling flow, etch.

***Claim Rejections - 35 USC § 112***

3. Claims 2, 3, 12, 19, 20, 22, 27, 33 rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claims 2, 12,

Art Unit: 1723

20, 27 are redundant, since the limitations is provided in the independent claim from which they depend. As to claims 3 and 22, the term "20-500" is unclear as to whether "200-500" is intended. In claim 33, the term "does t" should be "doesn't".

### ***Conclusion***

4. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Koch Industries, Inc. News and Awards, the article suggest use of Nf membrane from the SR® series in drinking water in municipal plants, the low pressure operation, e.g. SR®2.

5. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

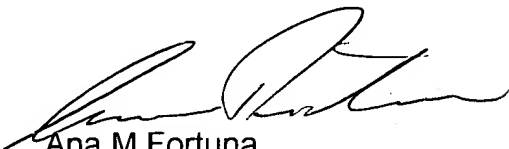
A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Art Unit: 1723

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ana M. Fortuna whose telephone number is (571) 272-1141. The examiner can normally be reached on 9:30-6:00 M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wanda L. Walker can be reached on (571) 272-1151. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Ana M Fortuna  
Primary Examiner  
Art Unit 1723

AF  
July 29, 2005